

Total Hip Arthroplasty Learning Curves for New Fellowship-trained Surgeons

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INTRODUCTION

- The posterolateral (PL) approach is the most utilized approach for total hip arthroplasty (THA).
- The direct anterior (DA) approach has been gaining popularity, but there is concern that the DA approach is associated with a steeper learning curve than that of the PL approach.
- The purpose of this study was to investigate if the learning curve is similar for newly trained arthroplasty fellowship-trained surgeons using the DA vs PL approaches.**

Methods

- Two recently graduated DA and two recently graduated PL fellowship-trained arthroplasty surgeons were identified.
- Their first 100 primary THA cases in practice were collected and divided into 50 case cohorts for each surgeon.
- Age, sex, and BMI were collected for each patient along with the primary indication for surgery.
- Medical records were reviewed to determine 90-day Hip Society Standardized complications following surgery.
- Continuous variables were analyzed using independent sample t tests. Categorical variables were analyzed using chi-square tests or Fisher's exact tests.

RESULTS

- When comparing the DA vs PL surgeons first 50 cases, there were no significant differences in reoperations (PL 4% vs DA 1%, p=0.15), surgical complications ((PL 9% vs DA 4%, p=0.06), and total complications (PL 13% vs DA 7%, p=0.09).
- Both the PA and DA groups, had lower reoperation rates, surgical complications, and total complications when comparing the first 50 versus second 50 cases.
- For all surgeons combined, there were higher complications rates when comparing the first 50 cases to the second 50 cases for reoperations (2.8% vs 1.2%, p=0.2), surgical complications (6.6% vs 3%, p=0.036), and total complications (10% vs 6.3%, p=0.06).

	Posterior	Anterior	p-value
Reoperations first 50	4% (6/150)	1% (2/150)	p=0.15
Surgical Complications First 50	9% (14/150)	4% (6/150)	p=0.06
Total Complications First 50	13% (20/150)	7% (11/150)	p=0.09

Table 1: Complications by Approach

	First 50	Second 50	p-value
DA Reoperations	1% (2/150)	0% (0/100)	p=0.49
DA Surgical Complications	4% (6/150)	2% (3/150)	p=0.31
DA Total Complications	7% (11/150)	6% (9/150)	p=0.64
PL Reoperations	4% (6/150)	2% (3/150)	p=0.31
PL Surgical Complications	9% (14/150)	4% (6/150)	p=0.064
PL Total Complications	13% (20/150)	6.5% (10/150)	p=0.054

Table 2: Complications by First 50 Cases and Second 50 Cases

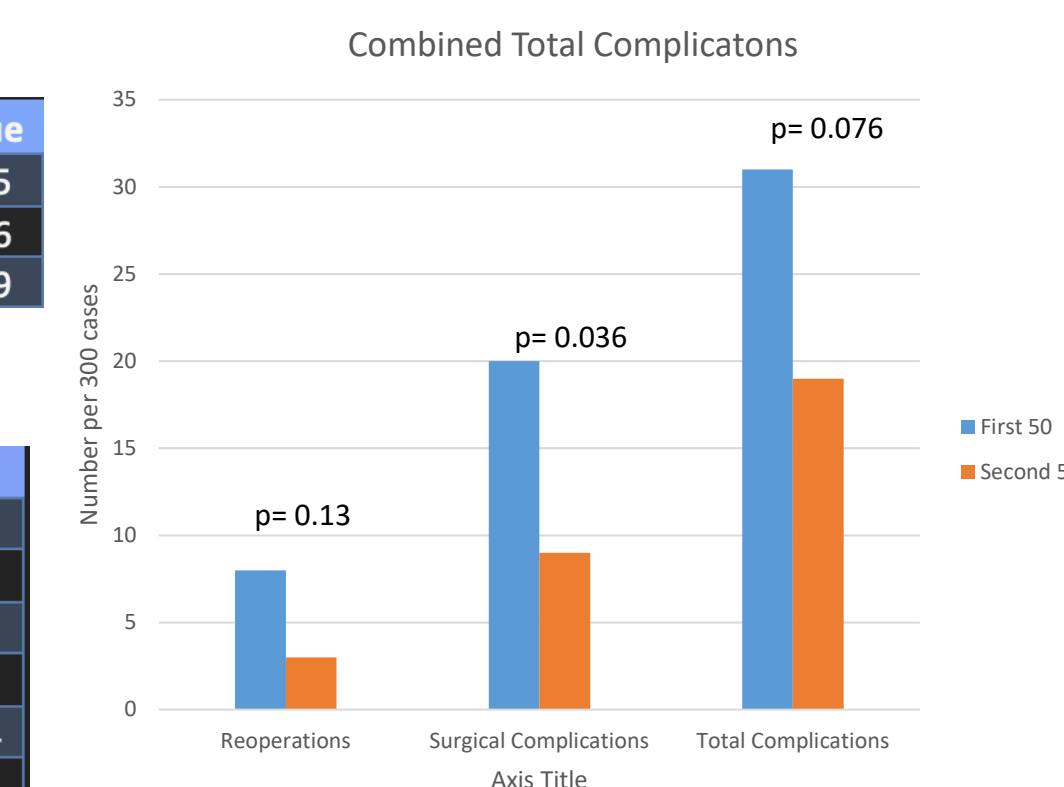


Figure 1: Combined Complications (Both DA and PL surgeons) during first 50 and second 50 cases

CONCLUSION

- This study suggests a learning curve for all THA surgeons during their first 50 cases in practice.
- There were no differences in the learning curve when comparing the DA and PL approach for fellowship-trained arthroplasty surgeons.
- With proper training, early-career surgeons can safely perform THA with similar complication rates regardless of approach.

DISCLOSURES

- These authors do not have a financial interest or other relationship with a commercial company or institution.

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